

ABSTRACT OF THE DISCLOSURE

An arrayed waveguide element having flat optical frequency characteristics, and an optical communication system using such arrayed waveguide element are realized by providing the arrayed waveguide element 131 that is prepared by forming an inputting channel waveguide 133 as well as an outputting channel waveguide 134, a channel waveguide array 135, a first sector form slab waveguide 136 for connecting the inputting channel waveguide 133 with the channel waveguide array 135, and a second sector form slab waveguide 137 for connecting the outputting channel waveguide 134 with the channel waveguide array 135 on a substrate 132. A waveguide part 152 wherein the outputting channel waveguide 134 is connected with the second sector form slab waveguide 137 is defined in a parabolic configuration, whereby flat optical frequency characteristics are realized. Furthermore, it is possible that an individual parabolic configuration is adjusted in response to a wavelength, so that it can cope with a trend of broad band in optical signals.